

CLAIMS

1. A method for cellular communication comprising:

transmitting code division multiple access (CDMA) signals of one user during a time slot allotted to said user.

- 5 2. A method according to claim 1 and also comprising spreading the data of said user to be transmitted during said time slot with more than one spreading code.
3. A method according to claim 1 wherein there are N spreading codes and wherein said transmitting comprises transmitting using a dynamic range of {-N,N}.
- 10 4. A method according to claim 1 and also comprising having a predetermined spreading factor and spreading the data of said user to be transmitted during said time slot with a spreading factor less than said predetermined spreading factor.
- 15 5. A cellular communication time period having multiple timeslots wherein each timeslot is allotted to one of a multiplicity of users and wherein information to be transmitted during said timeslot is encoded using codes assigned to at least two of said multiplicity of users.
- 20 6. A time period according to claim 5 and also comprising a predetermined spreading factor wherein said information is spread with a spreading factor less than said predetermined spreading factor.
7. A transmitter comprising:

a demultiplexer adapted to divide an input signal into a plurality N of sets of data;

a multiplicity N of spreaders each adapted to spread an associated one of said plurality of sets using an associated one of N spreading codes to produce N modulated segments; and

5 a summer adapted to sum said N modulated segments in a time aligned manner.

8. A transmitter according to claim 7 and also comprising a predetermined spreading factor defining the length of said spreading codes and a spreading factor changer for reducing said spreading factor to less than said predetermined spreading factor.

10 9. A transmitter comprising:

 a demultiplexer adapted to divide an input signal into a plurality N of sets of data;

15 a multiplicity N of spreaders each adapted to spread an associated one of said plurality of sets using an associated one of N spreading codes to produce N modulated segments;

 a summer adapted to sum said N modulated segments in a time aligned manner; and

 an upconverter adapted to convert the output of said summer into radio frequency signals.

20 10. A receiver comprising:

 a multiplicity N of bit reconstructors each adapted to use one of N despreading codes to produce N demodulated segments from a received signal; and

a multiplexer adapted to sum said demodulated segments into a received signal.

11. A receiver comprising:

5 a downconverter adapted to convert a received radio frequency signal to a baseband signal;

a multiplicity N of bit reconstructors each adapted to use one of N despreading codes to produce N demodulated segments from said baseband signal; and

10 a multiplexer adapted to sum said demodulated segments into a received signal.